SECTION 7 – POLLUTION PREVENTION AND GOOD HOUSEKEEPING

40 CFR 122.34 (b)(6) – Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

7.0 OVERVIEW

Many opportunities for preventing stormwater pollution can be found within a local government's own operations. This MCM emphasizes the operation and maintenance of MS4s and proper training of municipal employees. Altering daily operations that have the potential to contribute pollutants to stormwater and establishing schedules for cleaning and maintaining infrastructure can have positive effects on water quality. When local governments take advantage of pollution prevention opportunities within their own operations, results are often swift because improvements do not have to rely on gradual changes in citizen behavior. Typical affected municipal operations include parks, open space maintenance, road and right-of-way maintenance, fleet maintenance, city construction projects, and stormwater system maintenance. The following items should be considered:

- Maintenance activities and schedules
- Long-term inspection procedures for structural and non-structural stormwater controls
- Controls for reducing/eliminating discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, fleet or maintenance shops, sand storage locations, and waste transfer and disposal facilities.
- Procedures for properly disposing of waste removed from the separate storm sewers and areas listed above (such as dredge spoil, accumulated sediments, floatables, and other debris)
- Ensuring that new and existing flood management projects assess the impacts on water quality

Table 7.1 BMP and measurable goal summary for Pollution Prevention and Good Housekeeping.

BMP	MEASURABLE GOAL	PERMIT YEAR				
		1	2	3	4	5
Structural control maintenance	Develop inventory of structural controls; develop inspection and maintenance schedule			X		
	Implement inspection and maintenance program				X	
Waste disposal	Develop stormwater waste management procedures; train employees on proper waste management			X		
Employee/Contractor Education Program	Develop training modules; implement training program			X		
Outdoor storage	Inventory all storage locations; identify discarded materials; evaluate facilities annually		X			
Street sweeping	Monitor build-up of litter and sediment and make street sweeping recommendation			X		
	Implement recommendation				X	
Fleet and equipment maintenance	Assess vehicle maintenance locations; evaluate maintenance schedule of catch basins; develop training program		X			
	Install additional catch basins, if necessary			X		
	Evaluate fleet operations to determine additional measures to be taken, if any				X	
Vehicle and equipment washing	Evaluate drainage and wash facilities and make recommendation		X			
	Implement recommendation			X		
Spill prevention and response	Provide spill response kits and training		X			
Facility inspection program	Develop list of facilities to be inspected; develop inspection procedures		X			
	Implement inspection program			X		
Erosion/sediment control	Develop comprehensive soil erosion and sediment controls for municipal construction projects			X		
Landscaping	Develop training materials; implement training program, change contract verbiage			X		
Open space management	Evaluate need for policy		X			
	implement policy, if deemed necessary			X		

7.1 STRUCTURAL CONTROL MAINTENANCE

Description
As part of the evaluation of the existing regional stormwater management system, an inventory of existing city-managed structural controls will be established. Structural approaches to managing stormwater are actual structures that physically prevent, inhibit, or slow the rate at which pollutants reach water bodies. An inspection and maintenance schedule will be established for these structural controls to promote their effective operation for stormwater quality treatment. Pollution can be prevented by establishing schedules for the periodic cleaning of storm drain systems. Regular cleaning of catch basins, drain pipes, and other system components. This can reduce suspended sediment and oxygen dissolving materials in stormwater, as well as prolong the life of the system.

Measurable Goals

- Develop inventory of City structural controls.
- Develop inspection and maintenance schedule.
- Implement inspection and maintenance program.

Costs

- Labor – Existing City staff
- Equipment Supplies – TBD

Implementation Schedule
Develop inventory of City structural controls in Permit Year 3. Develop inspection and maintenance schedule and evaluate resource needs in Permit Year 3. Implement inspection and maintenance program in Permit Year 4.

7.2 WASTE DISPOSAL

Description
Sugar Land will establish a procedure for proper disposal of wastes including dredge spoil, accumulated sediments, and floatables removed from the MS4, removed from structural controls, or collected as a result of municipal operations and maintenance activities. Procedures will be developed to determine when to sample, and employees will be trained. For example, a representative sediment sample may be collected and analyzed as maintenance is performed in drainage areas or major structures, unless representative data of information already exists. This will provide the basis for determining proper disposal of wastes generated in the drainage area or structure (e.g., sediment accumulated in industrial areas may have a higher potential for contamination, and would have different disposal procedures). Areas would be resampled when the City has reason to believe there could be a change in the characteristics, and maintenance activities are occurring in that area.

Measurable Goals

- Develop stormwater waste management procedures.

- Train employees on proper stormwater waste management procedures.

Costs

- Labor – Existing City staff
- Equipment/Supplies – N/A

Implementation Schedule
Develop stormwater waste management procedure in Permit Year 3. Train employees on proper stormwater waste management procedures in Permit Year 3.

7.3 EMPLOYEE/CONTRACTOR EDUCATION PROGRAM

Description
Sugar Land will develop and provide employee training to prevent and reduce stormwater pollution from activities such as park maintenance, fleet and building maintenance, new construction, land disturbance, and stormwater system maintenance. Training programs ensure that stormwater quality programs are properly implemented and BMPs are properly installed and maintained. Ensuring proper management practices can reduce the need for costly structural controls. Stormwater quality training would also be incorporated into new employee orientation. Ongoing training and review on various topics would take place at the required monthly safety meetings.

The City will need to develop a curriculum for a training course and commit employees to teaching and/or receiving the training. Training modules may include:

- Proper fueling techniques
- Good housekeeping and material management practices
- Spill prevention, response, and notification procedures
- Proper waste handling procedures
- Proper tank and drum filling and transfer procedures
- Proper vehicle and equipment cleaning procedures
- Proper painting, sanding, blasting, and refinishing techniques
- Inspection procedures
- Temporary sediment control measures
- Stormwater sampling techniques

Measurable Goals

- Develop training modules.
- Provide training to municipal operations employees and their contractors, as applicable.

Costs

- Labor – Existing City staff
- Equipment/Supplies – Training materials

Implementation Schedule
Develop training modules by Permit Year 3. Municipal employee training will begin in Permit Year 3.

7.4 OUTDOOR STORAGE

Description
Stockpiles and used equipment are potential sources of stormwater pollution. Sugar Land will evaluate its facilities to ensure that usable materials are being stored properly and that unusable materials are being disposed of properly. The goal of this BMP is to prevent stored materials or any pollutant associated with them from reaching local waterways. This is accomplished through a variety of means, including covering stockpiles under a roof or tarp, diking storage areas to prevent runoff, or collecting the runoff and providing for its treatment.

The Service Center and other municipal facilities currently remove and dispose of stockpiled materials that are unusable or not intended for reuse. The City will evaluate its facilities as part of the annual self-audit to ensure that unusable materials are being disposed of properly and in a timely manner. Some of the stored materials may not be in usable condition or will not be reused. Any materials (concrete, metal, rock, sand, debris, old equipment) that are exposed to precipitation need to be recycled or disposed of properly if they are not intended for reuse. This will clear space that could be better utilized and aid in the reduction of sediment, heavy metals, oil and grease, and other pollutants. Some materials may require testing before proper disposition.

Measurable Goals

- Inventory all storage locations and assess the adequacy of the protection provided at existing storage areas.
- Identify discarded materials at municipal operations.
- Recycle or properly dispose of materials that are not needed at the municipal operations sites.

Costs

- Labor – Existing City staff
- Equipment/Supplies – Dependent on the materials and method of disposal

Implementation Schedule
Inventory all storage locations and assess the adequacy of the protection provided at existing storage areas in Permit Year 2. Identify any discarded materials at municipal

operations and remove non-usable materials in Permit Year 2. Evaluate facilities each Permit Year, beginning in Permit Year 2, to ensure that unusable materials are being disposed of properly and in a timely manner.

7.5 STREET SWEEPING

Description

Street sweeping can capture substantial amount of solids and other pollutants from street surfaces before they are washed into the storm drainage system and discharged into local waterways. Sugar Land will evaluate the frequency of street sweeping and prioritize areas by pollution potential. The City will then determine whether increased street sweeping would be beneficial to its stormwater management effort.

Sugar Land currently budgets approximately $46,000 per year to fund 40 hours per month of street sweeping. The City's street sweeping program targets boulevards and major intersections along Highway 6, Highway 90, and Eldridge Road, and municipal parking lots. Currently, the City does not sweep in front of residential homes unless the home is located on a major roadway.

The City will evaluate the need to increase contracted services for street sweeping or to purchase a street sweeper. The City does not currently have a street sweeper in its fleet. If the City deems it necessary to purchase a sweeper, capital costs for a conventional sweeper would range from $60,000 to $120,000. A newer technology sweeper would cost approximately $180,000. In addition, operation and maintenance costs are approximately $30 per curb mile for conventional sweepers and $15 per curb mile for newer technology sweepers. The average cost for street cleaning is estimated at $68 per curb mile at 11 curb miles per day.

Materials swept up from streets have a significant pollution potential and must be disposed of properly. Personnel operating street-sweeping equipment should be trained in proper collection, handling, and disposal methods. Most street sweeping debris can be disposed of in a Type II landfill, with costs ranging from $10 to $20 per cubic yard. If street sweeping is contracted out, the estimated cost for capital investment, operation and maintenance, and disposal may range from $130 to $150 per curb mile.

Measurable Goals

- Monitor the build-up of litter and sediment in priority areas and make a schedule recommendation based on a cost-benefit analysis.
- Evaluate need for additional equipment or contract services.
- Implement schedule recommendation.

Costs

- Labor – To be determined
- Equipment/Supplies – To be determined

Implementation Schedule
Monitor the build-up of litter and sediment between sweepings and make a schedule recommendation in Permit Year 3. Evaluate need for additional equipment or contract services in Permit Year 3. Implement schedule recommendation in Permit Year 4.

7.6 FLEET AND EQUIPMENT MAINTENANCE

Description
Sugar Land will inventory all vehicle maintenance locations. The City will assess if stored products are protected from the elements and if they are adequately protected from spillage. The review of handling and disposal of waste products is another consideration of this activity. The goal is to reduce the wash off of pollutants from these facilities. The wash down water from the Public Works fleet maintenance facility flows into an oil separator and is then routed to the storm sewer system. The City will evaluate the maintenance schedule of this catch basin and determine if improvements or additional catch basins and/or oil/grit separators are needed.

Sugar Land will develop and implement a training program that addresses the proper methods of storing, handling, and disposing of vehicle maintenance materials. Maintenance sites should be inspected and spill responses should be documented. The City will evaluate its fleet operations to determine what additional measures can be taken to reduce pollutants.

Measurable Goals

- Inventory all vehicle maintenance locations and assess if stored products are protected from the elements and if they are adequately protected from spillage.
- Evaluate maintenance schedule of the catch basins and determine if improvements are needed.
- Develop training program that addresses the proper methods of storing, handling, and disposing of vehicle maintenance materials.
- Implement training program.
- Evaluate need for a catch basin at the designated location for drivers to grease backhoes. Monitor procedures to ensure that all drivers are greasing the backhoes at the designated location.
- Install catch basin at the designated location for greasing backhoes, if deemed necessary.
- Evaluate fleet operations to determine what additional measures can be taken to reduce pollutants.

Costs

- Labor – Existing City staff
- Equipment/Supplies – To be determined

Implementation Schedule
Inventory all vehicle maintenance locations and assess if stored products are protected from the elements and if they are adequately protected from spillage in Permit Year 2. Evaluate maintenance schedule of the catch basin at the fleet maintenance facility and determine if improvements are needed in Permit Year 2. Develop training program in Permit Year 2. Implement training program Permit Year 2. By Permit Year 3, evaluate need for a catch basin at designated location for greasing backhoes, and monitor procedures to ensure that all drivers are greasing the backhoes at the proper location. Install catch basin in Permit Year 3, if deemed necessary. In Permit Year 4, evaluate fleet operations to determine what additional measures can be taken to reduce pollutants.

7.7 VEHICLE AND EQUIPMENT WASHING

Description
Sugar Land will evaluate the drainage at the vehicle and equipment wash facility for possible improvement. Water from the Public Works vehicle and equipment wash facility drains into a two catch basins that flow to the sanitary system. Currently, most City vehicles are washed at the Public Works facility, but there is no policy that mandates all vehicles are washed there. The City will develop a policy requiring all City departments, excluding Fire, to wash City vehicles at the Public Works facility. The Fire Department normally washes the Fire Trucks at the stations, and the City will evaluate the need to install catch basins at each fire station to prevent the automotive wash off from entering the storm sewer system.

No wash water should enter a stormwater drainage system. Vehicle and equipment wash facilities should recycle the wash water in a contained system or route the wash water to a sanitary sewer (a general permit may be issued by the TCEQ for direct discharge of wash water following pretreatment). Wash areas should be covered to minimize the amount of stormwater that enters the recycle or sanitary sewer system. If such a wash facility is not available or feasible, consider contracting vehicle and equipment cleaning offsite. Use only biodegradable and phosphate-free detergents.

Catch basins should be cleaned on a regular basis so as to maintain their function, which is to remove solids washed off the street during rainfall events. If not maintained, these materials can be discharged to local waterways. Sugar Land will review the existing catch basin maintenance schedule and determine if improvements can be made.

Measurable Goals

- Evaluate the drainage at the vehicle and equipment wash facility and make a recommendation.
- Implement recommendation.

Costs

- Labor – Existing City staff

- Equipment/Supplies – To be determined

Implementation Schedule
Evaluate the drainage at the vehicle and equipment wash facility and make a recommendation in Permit Year 2. The recommendation, if any, will be implemented in Permit Year 3.

7.8 SPILL PREVENTION AND RESPONSE

Description
Sugar Land will develop procedures and acquire equipment for prevention and timely response to spills from municipal operations. Sugar Land will provide training to applicable employees in spill response procedures and will provide spill response kits in convenient locations at the facility. In addition, the City will consider and address how spill response is handled both at municipal facilities and in the field to prevent spilled materials from entering the drainage system. A proper spill response procedure could save the costs of cleaning up material contaminated by spills.

Measurable Goals

- Provide spill response kits and training to applicable employees.

Costs

- Labor – Existing City staff
- Equipment/Supplies
    - Spill Kits
    - Dry absorbent
    - Training

Implementation Schedule
Provide spill response kits and training to applicable employees in Permit Year 2.

7.9 FACILITY INSPECTION PROGRAM

Description
Sugar Land will formalize municipal facility inspection procedures that potentially affect stormwater quality. These inspections will be conducted as part of the annual self-audit for City facilities. As a result of these inspections, the Auditor will develop stormwater minimization plans for City facilities as deemed necessary. Such inspections might include:

- Inspect and maintain stormwater treatment processes
- Routinely inspect vehicles and equipment for leaks
- Inspect and maintain sewer and drainage system.

Inspections facilitate early response to potential problems, usually at a lower cost. City staff will require more time to inspect facilities for pollutant sources that might impact stormwater quality. City staff will develop a list of items to be inspected, inspection procedures, inspection checklists, assignment of responsibility, and a procedure for documentation of response.

Measurable Goals

- Develop and implement inspection procedures.
- Develop inspection checklists.

Costs

- Labor – Existing City staff
- Equipment/Supplies – N/A

Implementation Schedule
Develop a list of facilities to be inspected in Permit Year 2. Develop or modify inspection procedures and inspection checklists in Permit Year 2. Implement inspection program in Permit Year 3.

7.10 EROSION/SEDIMENT CONTROL

Description
Municipalities need to adhere to the same construction site soil erosion and sediment controls required of private developments. Communities that are engaged in construction projects on community owned lands should develop comprehensive soil erosion and sediment controls and assure that they are fully implemented.

Measurable Goals

- Develop comprehensive soil erosion and sediment controls for construction sites greater than or equal to one acre on community owned lands.
- Monitor municipal construction projects to ensure that soil erosion and sediment controls are fully implemented.

Costs

- Labor – To be determined
- Equipment/Supplies – To be determined

Implementation Schedule
Develop comprehensive soil erosion and sediment controls for municipal construction projects in Permit Year 3. Throughout permit term, monitor municipal construction projects to ensure that soil erosion and sediment controls are fully implemented.

7.11 LANDSCAPING

Description
Contract and City employees engaged in landscaping activities should be trained in proper use of landscaping chemicals and in proper green waste disposal. In addition, workers should be trained to pick up any litter before mowing so that the trash doesn't get shredded and washed into the storm drain. The goal of landscaper education is to reduce chemical and green waste runoff to natural watercourses. This is accomplished by minimizing the use of herbicides, fertilizers, and insecticides to no more than the recommended levels and by properly disposing of green waste resulting from mowing, tree trimming, weed eating, and edging.

The City currently works with lawn maintenance contractors to minimize pollutants that flow to the storm drains. The Parks & Recreation Department coordinates with lawn maintenance workers to ensure that no fertilizer or pesticides are put out on the day of a storm. However, this management practice is not written into City lawn maintenance contracts. Sugar Land will develop contractual agreements that will require lawn maintenance contractors to follow stormwater quality BMPs. Sugar Land will also encourage contractors to recycle green waste when possible.

Sugar Land will also develop and implement a chemical application training program for all employees who handle or apply landscaping chemicals, including contracted employees. All employees should undergo training before they are allowed to apply any landscaping materials. As part of this program, the City will maintain a record of chemicals used, where they were used, and how they were applied including application rates.

Measurable Goals

- Develop or acquire training materials on the proper use of landscaping chemicals and the proper disposal of yard waste.
- Implement employee training program for contract and City employees on the proper use of landscaping chemicals and the proper disposal of yard waste.
- Change contract verbiage for outsourced landscaping activities to require contractors to follow program recommendations.

Costs

- Labor – Existing City staff
- Equipment/Supplies – Training materials

Implementation Schedule
Develop or acquire training materials in Permit Year 3. Implement employee training program in Permit Year 3. Change contract verbiage for outsourced landscaping activities in Permit Year 3.

7.12 OPEN SPACE MANAGEMENT

Description
The objective of this BMP is to reduce pollution and its effects by limiting maintenance operations near natural watercourses by leaving a buffer area that is natural and uncut. It also involves the encouragement of tree growth to enhance natural watercourse health.

Sugar Land will evaluate the need to develop a policy to protect and preserve open space buffer areas and to establish no-mow zones to allow trees and shrubs to reclaim disturbed stream banks.

Measurable Goals

- Evaluate the need to develop a policy to protect and preserve open space buffer areas and to establish no-mow zones.
- Implement policy, if deemed necessary.

Costs

- Labor – Existing City staff
- Equipment/Supplies – N/A

Implementation Schedule
In Permit Year 2, evaluate the need to develop a policy to protect and preserve open space buffer areas and to establish no-mow zones. Implement policy in Permit Year 3, if deemed necessary.